



## Chemistry

Time Remaining: 45/45 (Minutes)

Q.1

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Those substances which slow down a reaction are called?

- a. Accelerator
- b. Co-enzyme
- c. Inhibitors
- d. Catalyst

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Correct Answer:

- ☐ A ☐ B ☐ C ☐ D

Next



Time Remaining: 44/45 (Minutes)

Q.2

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Decomposition of formic acid into  $\text{CO}_2$  and  $\text{H}_2$  is catalyzed by:

- a. Cu                      b.  $\text{Al}_2\text{O}_3$   
c.  $\text{FeO}_3$                 d. Both 'a' and 'b'

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Correct Answer:

☒ A   ☐ B   ☐ C   ☐ D

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Time Remaining: 44/45 (Minutes)

Q.3

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

If  $T_2 > T_1$  which is incorrect for a reaction:

$A + \text{heat} \rightarrow B$

- a. Greater number of activated complex formed
- b. Rate of reaction increase
- c. All molecules have energy greater than  $E_a$
- d. None of given

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 44/45 (Minutes)

Q.4

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

How much rise in temperature approximately doubles the reaction rate?

- a. 20 K      b. 10 K  
c. 30 K      d. 5 K

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Correct Answer:

☒ A   ☐ B   ☐ C   ☐ D

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Time Remaining: 44/45 (Minutes)

Q.5

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**Log K = log A -  $E_a/2.303RT$  , considering above equation which is incorrect:**

- a.  $K \propto T$
- b. Value of A is independent of reactants and products
- c.  $K \propto 1/E_a$
- d.  $K \propto E_a$

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 44/45 (Minutes)

Q.6

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**Generally increase in temperature results in:**

- a. Decrease of rate of exothermic reaction
- b. Decrease of rate of endothermic reaction
- c. Increase of rate of any reaction whether the reaction is an endothermic or exothermic
- d. Decrease in number of effective collision

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 44/45 (Minutes)

Q.7

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Which have moderate speed?

- a. Ionic reactions
- b. Molecular reactions
- c. Free radical reaction
- d. Neutralization reactions

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 43/45 (Minutes)

Q.8

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

In concentration time graph steepness of the graph indicates, rate of the reaction has \_\_\_\_\_ relationship with steepness:

- a. direct
- b. Inverse
- c. No
- d. None of these

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 43/45 (Minutes)

Q.9

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Which is incorrect for order of reaction?

- a. Can be zero
- b. Can be infraction
- c. order of reaction and molecularity both are always same
- d. theoretical and experimental order not necessarily be same

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining: 43/45 (Minutes)

Q.10

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Those substances which make a catalyst more effective?

- a. Catalyst for a catalyst
- b. Inhibitors
- c. Promoter
- d. both 'a' and 'c'

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Correct Answer:

☒ A ☐ B ☐ C ☐ D

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Time Remaining 43/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**When a reaction occurs in many steps than the slowest step is:**

- a. Mechanism determining step
- b. Average rate of a reaction
- c. Instantaneous rate of reaction
- d. none of the above

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Correct Answer:



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Time Remaining 43/45 (Minutes)

Q.111

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Decomposition of Ozone takes place according to the following equation to the following equation:

$2O_{3(g)} \rightarrow 3O_{2(g)}$  Rate equation for the reaction is

Rate  $K = [O_3]^2 [O_2]^{-1}$

What is the order of the reaction?

- a. 3                      b. zero  
c. 2                      d. 1

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Correct Answer:



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Time Remaining 43/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**For a radioactive substance, Half-life period of a first order reaction is independent of:**

- a. Initial concentration of the reactant
- b. Conditions of temperature
- c. Presence of catalyst
- d. All the above

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Correct Answer:



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Time Remaining 43/45 (Minutes)

Q.111

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

All kind of volumetric analysis methods are considered as \_\_\_\_\_ methods to study the reaction rate.

- a. Physical
- b. Chemical
- c. Numerical
- d. Non Valuable

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Correct Answer:



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Time Remaining 43/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**The energy of activation of forward reaction is less than that of backward reaction in:**

- a. Endothermic reactions
- b. Exothermic reaction
- c. Isotherm reaction
- d. none of the above

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Correct Answer:



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Time Remaining 43/45 (Minutes)

Q.10

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**A catalyst:**

- a. Changes equilibrium position
- b. Increases the rate of forward reaction and decreases the rate of reverse reaction.
- c. Increases the rate of forward reaction
- d. decreases the rate of both forward and reverse reactions.

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Correct Answer:



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Time Remaining 43/45 (Minutes)

Q.17

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**Poisoning of a catalyst may be temporary or permanent, in permanent poisoning:**

- a. Catalyst react with reaction
- b. Catalyst reacts with product
- c. Catalyst does not react with the poison
- d. Physical state of catalyst changes

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Correct Answer:



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Time Remaining 43/45 (Minutes)

Q.117

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**When rate of reaction is retarded by adding a substance, it is said to be:**

- a. Catalyst
- b. negative catalyst
- c. Auto catalyst
- d. none of the above

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Indicate the enzyme which catalyzes the following reaction?



- a. Zymase
- b. Invertase
- c. Urease
- d. Diastase

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.23

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**When a reaction proceeds in a sequence of steps, the overall rate is determined by:**

- a. Fastest step
- b. Slowest step
- c. Order of different steps
- d. molecularity of the entire step

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

$2\text{NO}_2 \rightarrow \text{N}_2\text{O}_4$  is order of reaction: rate  $\propto [\text{NO}_2]^2$

- a. Second
- b. Third
- c. First
- d. zero

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**Rate of reaction depends upon:**

- |                |                  |
|----------------|------------------|
| a. Temperature | b. Concentration |
| c. Pressure    | d. All above     |

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.18

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

The protein part of an enzyme is called:

- a. Cofactor
- b. coenzyme
- c. Apoenzyme
- d. all of given

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

With the increase in temperature, the efficiency of a catalyst:

- a. Decreases
- b. increases constantly
- c. increases to maximum and then decreases
- d. Remains unaltered

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.318

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**A process is said to be a homogenous catalysis when:**

- a. Both reactants and products in same phase
- b. Both reactants and reacting substances are in same phase
- c. Both products and catalyst in same phase
- d. Reactants, products and catalyst all are in same phase

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.30

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**When concentration of reactants is doubled then half-life period of first order reaction:**

- a. Does not change
- b. decrease to one half
- c. Increase and become doubled
- d. decrease to one third

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Correct Answer:



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Time Remaining 42/45 (Minutes)

Q.11

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

**Activation energy is the gap between energy states of:**

- a. Reactants and products
- b. Products and activated complex
- c. Reaction and activated complex
- d. reactants and activated complex

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Correct Answer:



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Time Remaining 41/45 (Minutes)

Q.18

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Radioactive disintegration are usually:

- a. Zero order
- b. first order
- c. 2<sup>nd</sup> order
- d. 3<sup>rd</sup> order

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Correct Answer:



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Time Remaining 41/45 (Minutes)

023

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

In zero order reaction the rate is independent of:

- a. Temperature of reaction
- b. Concentration of reaction
- c. Concentration of products
- d. none of these

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Correct Answer:



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Time Remaining 41/45 (Minutes)

Q.30

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

The energy of activation always have \_\_\_\_\_ relationship with reaction rate:

- a. direct
- b. inverse
- c. Exponential
- d. None of these

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Correct Answer:



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## Chemistry

Time Remaining 41/45 (Minutes)

Q311

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

The unit of slope of the straight line obtained by plotting a graph between  $1/T$  on x-axis and  $\log K$  on y-axis, is:

- a.  $K^{-1}$                       b.  $K \text{mol}^{-1}$   
c.  $K^{-1} \text{mol}^{-1}$                 d.  $K$

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Correct Answer:



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Time Remaining 41/45 (Minutes)

Q.31

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

In optical rotation method the angle through which plane polarized light is rotated by the reaction mixture is measured by a:

- a. Refractometer
- b. Polarimeter
- c. Spectrometer
- d. Electrometer

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Correct Answer:



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Time Remaining 40/45 (Minutes)

Q.30

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

The half-life of second order reaction is equal to:

a.  $\frac{1}{K}$

b.  $\frac{1}{Ka}$

c.  $\frac{0.693}{K}$

d.  $\frac{1.5}{Ka}$

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Correct Answer:



A



B



C



D

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Time Remaining 40/45 (Minutes)

Q34

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Which statement about reaction rate is incorrect?

- a. Reaction rate decreases with time
- b. Reaction rate never remains uniform during the different time period
- c. Reaction rate decreases continuously till the reaction rate ceases
- d. None of the given

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Correct Answer:



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Time Remaining 40/45 (Minutes)

Q30

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Which statement is incorrect?

- a. At the start of reaction, the instantaneous rate is higher than average rate.
- b. As the time interval becomes smaller the average rate becomes closer to the instantaneous rate.
- c. Average rate will be equal to the instantaneous when the time intervals approaches to zero
- d. At the end of interval the average rate becomes lower than the average rate.

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Correct Answer:



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Time Remaining 39/45 (Minutes)

Q.30

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Which is the correct relation between the half-life and third order reaction:

- a.  $[t_{1/2}] \propto \frac{1}{a^0}$
- b.  $[t_{1/2}] \propto \frac{1}{a^3}$
- c.  $[t_{1/2}] \propto \frac{1}{a^2}$
- d.  $[t_{1/2}] \propto \frac{1}{a^{0.5}}$

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Correct Answer:



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Time Remaining 39/45 (Minutes)

Q.31

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

If reaction rate increases four times on doubling the initial concentration of reactants then the reaction is:

- a. First order
- b. Third order
- c. Second order
- d. Zero order

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Correct Answer:



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Time Remaining 39/45 (Minutes)

Q.38

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

The disintegration of radioactive  $^{235}_{92}\text{U}$  is a:

- a. Zero order reaction
- b. First order reaction
- c. Second order reaction
- d. Third order reaction

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Correct Answer:



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Time Remaining 39/45 (Minutes)

Q.39

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Formic acid is decomposed into CO and  $H_2O$  in the presence of:

a.  $Al_2O_3$

b.  $Cr_2O_3$

c.  $Mn_2O_3$

d.  $MnO_2$

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Correct Answer:



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Time Remaining 39/45 (Minutes)

Q.45

Test 8 Reaction Kinetics

CHEMISTRY NMDCAT

Which one of the reaction Proceed at moderate rate?

- a. Rusting of iron
- b. White ppt of AgCl
- c. Hydrolysis of an ester
- d. Fermentation of sugars

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Correct Answer:



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# NMDCAT UNITWISE TEST 9

## Unit-7

### REACTION KINETICS

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Q. 1

Those substances which slow down a reaction are called?

- a. Accelerator
- b. Co-enzyme
- c. **Inhibitors**
- d. Catalyst

THE STAR INSTITUTE

## Q. 2

Decomposition of formic acid into  $\text{CO}_2$  and  $\text{H}_2$  is catalyzed by:

a. Cu

b.  $\text{Al}_2\text{O}_3$

c.  $\text{FeO}_3$

d. Both 'a' and 'b'

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## Q. 3

If  $T_2 > T_1$  which is incorrect for a reaction:



- a. Greater number of activated complex formed
- b. Rate of reaction increase
- ☒ c. All molecules have energy greater than  $E_a$
- d. None of given

THE STAR INSTITUTE

Q. 4

How much rise in temperature approximately doubles the reaction rate?

a. 20 K

b. 10 K

c. 30 K

d. 5 K

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## Q. 5

$\log K = \log A - E_a/2.303RT$ , considering above equation which is incorrect:

- a.  $K \propto T$
- b. Value of A is independent of reactants and products
- c.  $K \propto 1/E_a$
- d.  $K \propto E_a$

THE STAR INSTITUTE



## Q. 6

Generally increase in temperature results in:

- a. Decrease of rate of exothermic reaction
- b. Decrease of rate of endothermic reaction

**■ Increase of rate of any reaction whether the reaction is an endothermic or exothermic**

- d. Decrease in number of effective collision

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## Q. 7

Which have moderate speed?

- a. Ionic reactions
- b. Molecular reactions**
- c. Free radical reaction
- d. Neutralization reactions

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## Q. 8

In concentration time graph steepness of the graph indicates, rate of the reaction has relationship with steepness:

- ☒ a. direct
- ☐ b. Inverse
- ☐ c. No
- ☐ d. None of these

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## Q. 9



Which is incorrect for order of reaction?

- a. Can be zero
- b. Can be infraction
- c. order of reaction and molecularity both are always same**
- d. theoretical and experimental order not necessarily be same

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### Q. 10

Those substances which make a catalyst more effective?

- a. Catalyst for a catalyst
- b. Inhibitors
- c. Promoter
- d. both  and 

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## Q. 11

When a reaction occurs in many steps than the slowest step is:

- a. Mechanism determining step
- ☒ b. Average rate of a reaction
- c. Instantaneous rate of reaction
- d. none of the above**

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## Q. 12

Decomposition of Ozone takes place according to the following equation to the following equation:

$2O_{3(g)} \rightarrow 3O_{2(g)}$  Rate equation for the reaction is  $\text{Rate } K = [O_3]^2 [O_2]^{-1}$

What is the order of the reaction?



a. 1

b. zero

d. 1

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## Q. 13

For a radioactive substance, Half-life period of a first order reaction is independent of:

- a. Initial concentration of the reactant
- b. Conditions of temperature
- c. Presence of catalyst
- d. All the above

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## Q. 14

All kind of volumetric analysis methods are considered as \_\_\_\_\_ methods to study the reaction rate.

- a. Physical
- b. Chemical
- c. Numerical
- d. Non Valuable

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## Q. 15

The energy of activation of forward reaction is less than that of backward reaction in:

- a. Endothermic reactions
- b. Exothermic reaction**
- c. Isotherm reaction
- d. none of the above

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## Q. 16

A catalyst:

- a. Changes equilibrium position
- b. Increases the rate of forward reaction and decreases the rate of reverse reaction.
- ☒ c. **Increases the rate of forward reaction**
- d. decreases the rate of both forward and reverse reactions.

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### Q. 17

Poisoning of a catalyst may be temporary or permanent, in permanent poisoning:

- a. Catalyst react with reaction
- b. Catalyst reacts with product
- c. Catalyst does not react with the poison
- d. Physical state of catalyst changes**

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## Q. 18

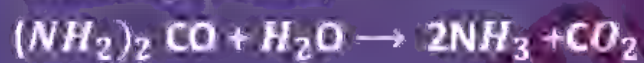
When rate of reaction is retarded by adding a substance, it is said to be:

- a. Catalyst
- b. negative catalyst**
- c. Auto catalyst
- d. none of the above

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## Q. 19

Indicate the enzyme which catalyzes the following reaction?



a. Zymase

b. Invertase

☒ c. Urease

d. Diastase

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## Q. 20

When a reaction proceeds in a sequence of steps, the overall rate is determined by:

- a. Fastest step
- b. Slowest step**
- c. Order of different steps
- d. molecularity of the entire step

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## Q. 21

$2\text{NO}_2 \rightarrow \text{NO}_2 + \text{O}_2$  is order of reaction: rate  $\propto [\text{NO}_2]^2$

☒ Second

c. First

b. Third

d. zero

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## Q. 22

Rate of reaction depends upon:

- a. Temperature
- b. Concentration
- c. Pressure
- d. All above

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## Q. 23

The protein part of an enzyme is called:

- a. Cofactor
- b. coenzyme
- ☒ c. **Apoenzyme**
- d. all of given

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## Q. 24

With the increase in temperature, the efficiency of a catalyst:

- a. Decreases
- b. Increases constantly
- c. Increases to maximum and then decreases
- d. Remains unaltered

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**Q- 25**

A process is said to be a homogenous catalysis when:

- a. Both reactants and products in same phase
- b. Both reactants and reacting substances are in same phase
- c. Both products and catalyst in same phase

**d. Reactants, products and catalyst all are in same phase**

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## Q. 26

When concentration of reactants is doubled then half-life period of first order reaction:

- ☒ a. Does not change
- ☐ b. decrease to one half
- ☐ c. Increase and become doubled
- ☐ d. decrease to one third

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## Q. 27

Activation energy is the gap between energy states of:

- a. Reactants and products
- b. Products and activated complex
- c. Reaction and activated complex
- d. reactants and activated complex**

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## Q. 28

Radioactive disintegration are usually:

- a. Zero order
- b. first order**
- c. 2<sup>nd</sup> order
- d. 3<sup>rd</sup> order

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## Q. 29

In zero order reaction the rate is independent of:

- a. Temperature of reaction
- b. Concentration of reaction
- c. Concentration of products
- d. none of these

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## Q. 30

The energy of activation always have relationship with reaction rate:

- a. direct
- b. **inverse**
- c. Exponential
- d. None of these

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## Q. 31

The unit of slope of the straight line obtained by plotting a graph between  $1/T$  on x-axis and  $\log K$  on y-axis, is:

a.  $K^{-1}$

b.  $K \text{ mol}^{-1}$

c.  $K^{-1} \text{ mol}^{-1}$

d.  $K$

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## Q. 32

In optical rotation method the angle through which plane polarized light is rotated by the reaction mixture is measured by a:

- a. Refractometer
- b. **Polarimeter**
- c. Spectrometer
- d. Electrometer

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Q. 33

The half-life of second order reaction is equal to:

a.  $\frac{1}{K}$

b.  $\frac{1}{Ka}$

c.  $\frac{0.693}{K}$

d.  $\frac{1.5}{Ka}$

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## Q. 34

Which statement about reaction rate is incorrect?

- a. Reaction rate decreases with time
- b. Reaction rate never remains uniform during the different time period
- c. Reaction rate decreases continuously till the reaction rate ceases
- d. None of the given

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## Q. 35

Which statement is incorrect?

- a. At the start of reaction, the instantaneous rate is higher than average rate.
- b. As the time interval becomes smaller the average rate becomes closer to the instantaneous rate.
- c. Average rate will be equal to the instantaneous when the time intervals approaches to zero
- d. At the end of interval the average rate becomes lower than the average rate

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## Q. 36

Which is the correct relation between the half-life and third order reaction:

a.  $[t_{1/2}] \propto \frac{1}{a^0}$

b.  $[t_{1/2}] \propto \frac{1}{a^3}$

c.  $[t_{1/2}] \propto \frac{1}{a^2}$

d.  $[t_{1/2}] \propto \frac{1}{a^{0.1}}$

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## Q. 37

If reaction rate increases four times on doubling the initial concentration of reactants then the reaction is:

- a. First order
- b. Third order
- c. **Second order**
- d. Zero order

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## Q. 38

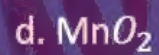
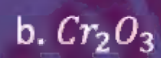
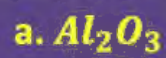
The disintegration of radioactive  ${}_{92}^{235}\text{U}$  is a:

- a. Zero order reaction
- b. First order reaction**
- c. Second order reaction
- d. Third order reaction

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## Q. 39

Formic acid is decomposed into CO and  $H_2O$  in the presence of:



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## Q. 40

Which one of the reaction Proceed at moderate rate?

- a. Rusting of iron
- b. White ppt of AgCl
- c. Hydrolysis of an ester**
- d. Fermentation of sugars

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